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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,255	05/15/2007	Takayoshi Honda	289735US2PCT	2218

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

LAUCHMAN, LAYLA G

ART UNIT	PAPER NUMBER
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2877

NOTIFICATION DATE	DELIVERY MODE
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11/19/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/576,255	Applicant(s) HONDA ET AL.	
	Examiner L. G. Lauchman	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4 is/are rejected.
- 7) ☐ Claim(s) 2,3 and 5-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/06/08; 4/17/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because it includes two paragraphs and exceeds 150 words. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: The reference to the claims (for example, see page4) should be deleted from the specification. Appropriate correction is required.

Claim Objections

Claims 5-12 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 4. See MPEP § 608.01(n). Accordingly, the claims 5-12 not been further treated on the merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ridley et al (EP 0887638 A1) ("Ridley"), and in view of Bucher et al (US 5,724,437) ("Bucher").

As to Claim 1, Ridley teaches an apparatus (see Fig. 7), comprising a conveyer means 4 for conveying a plurality of objects; an irradiating means 5 for irradiating near-infrared rays to the plurality of objects 3 conveyed by means of the conveyer means 4; a plane spectrometer 7 performing plane spectroscopy for a reflected light of the near-infrared rays reflected from the plurality of objects, to which the near-infrared rays are irradiated with the irradiating means; and an analyzing means for detecting a different kind of object from the plurality of objects using a method of main component analysis upon obtaining spectral data of the reflected light by means of analyzing the electric signal obtained with the imaging means (see page 2 under Description, lines 17 - 24). The reference does not specifically disclose an imaging means for converting a plane spectrogram of the reflected light produced through the plane spectrometer into an electric signal by means of a near-infrared ray camera. Bucher teaches an image capturing apparatus 38 (col. 21, lines 21-30; col. 26, lines 17-30, col. 26, lines 50-67) for converting a spectrogram into an electric signal (see fig. 4, reference 39), and computing apparatus 17 processing the image data. It would have been obvious to one skilled in the art to use an imaging means in the invention of Ridley in order to extract information about the spatial distribution of the objects.

As to Claim 4, the Examiner takes an Official Notice that in the art of spectroscopy some of the analyzing means perform a processing for smoothing the spectral data by using Fourier transforms and sinc smoothing functions (see Smoothing of spectral data in the Fourier domain, Kauppinen et al, Applied Optics, Vol. 21, Issue 10, pp. 1866-1872). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was conceived to use such analyzing means in order to achieve the predictable results and gain the benefits of the previous developed methods.

Allowable Subject Matter

Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record taken alone or in combination, fails to disclose or render obvious the analyzing means configured to perform a wavelength axis averaging processing for averaging spectral data in a direction of the wavelength axis; an interpolation processing for interpolating the spectral data using Lagrangian secondary interpolation; a measuring position optimization processing for detecting a center position of the object by means of detecting an edge of the object upon accumulating the spectral data in a direction of a spatial axis; a spatial axis averaging processing for obtaining an average value of each of the wavelengths at a plurality of points in the vicinity of the center position of the object detected by means of the measuring position optimization processing; a differentiation processing for performing a first differentiation or a second differentiation for the spectral data; a main component score calculation processing for

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calculating the main component score by means of calculating previously obtained loading vector data and the spectral data obtained from the above-listed processes; and a determination processing for determining whether to be the different kind of object or the same kind of object on the basis of the calculated main component score, in combination with the rest of the limitations of claim 1.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to L. G. Lauchman whose telephone number is (571) 272-2418. The examiner's normal work schedule is 8:00am to 4:30pm (EST), Monday through Friday. If attempts to reach examiner by the telephone are unsuccessful, the examiner's supervisor Gregory J. Toatley, Jr. can be reached on (571) 272-2059, ext. 77.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Any inquiry of a general nature or relating to the status of this application should be directed to the TC receptionist whose telephone number is (571) 272-1562.

/L. G. Lauchman/
Primary Examiner, Art Unit 2877

11/18/2009